



Malaria and its vectors in the Caribbean: The continuing challenge of the disease forty-five years after eradication from the Islands

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Abstract:

OBJECTIVES: Given the occurrence of autochthonous malaria in non-endemic island countries in the last 10 years, this study evaluates the risk factors for malaria transmission in the malaria "endemic and "non-endemic" countries of the Caribbean region. **DESIGN:** Data on imported and autochthonous malaria for the 27-year period (1980-2006) were gathered from surveillance units in the 21 Caribbean Epidemiology Centre (CAREC) Member Countries (CMCs) via the CAREC epidemiology unit. Anopheles mosquito data were also gathered from various sources. The vector and malaria data were correlated to determine the current risk of malaria transmission. **RESULTS:** Imported cases. For the 26-year period (1980-2005), there were 897 reported cases in the CMC islands. Jamaica (38.4%) > Trinidad and Tobago (19.5%) > Bahamas (15.8%) > Cayman Islands (12.5%) were mostly affected. Only the smallest CMCs eg Anguilla and British Virgin Islands reported no imported malaria. Indigenous malaria. Over the same time period, malaria was seen mainly in the three mainland countries of Guyana (514 386 cases) > Suriname (275 361) > Belize (85 313). However, for the period 1995-2005, Belize and Guyana reported reduction in case numbers of 84% and 54% respectively. At the same time, Suriname reported a cyclical pattern of reported cases resulting in 77% increase in cases between 1995 and 2005. "Non-endemic" CMCs such as Trinidad and Tobago, and Bahamas, did report autochthonous malaria. In 2006/7, Jamaica reported 340 *P. falciparum* cases, coming just 1-2 years after a massive 505% increase in imported malaria in the region--88% in Jamaica. *Anopheles* spp: There was a rich diversity of *Anopheles* mosquitoes--29 spp. in CMCs. Mainland CMCs and nearby island countries had most spp. recorded. Smaller countries with limited ecological niches such as St Kitts, Anguilla, Turks and Caicos Islands (TCI) and Bermuda had little or no *Anopheles* spp. Two main *Anopheles* axes were identified--*An. albimanus* in the northern CMCs and *An. aquasalis* in the southern Caribbean. **CONCLUSION:** All the essential malaria transmission conditions--vector, imported malaria organism and susceptible human host--now exist in most CMCs. A call is now made for enhanced surveillance, vector control and anti-malaria skills to be established in CMCs, in particular in: Recognizing the possible impact of climate change on the spread of *Anopheles* and malaria transmission. Improving vector control skills for *Anopheles* in CMCs. Strengthening malaria surveillance skills. Upgrading malaria therapy and prophylaxis. Emphasizing malaria prevention and education for all community and professional sectors.

Resource Description

Exposure : ☒

weather or climate related pathway by which climate change affects health

Temperature

Climate Change and Human Health Literature Portal

Temperature: Fluctuations

Geographic Feature: 

resource focuses on specific type of geography

Ocean/Coastal

Geographic Location: 

resource focuses on specific location

Non-United States

Non-United States: Non-U.S. North America

Health Impact: 

specification of health effect or disease related to climate change exposure

Infectious Disease

Infectious Disease: Vectorborne Disease

Vectorborne Disease: Mosquito-borne Disease

Mosquito-borne Disease: Malaria

Resource Type: 

format or standard characteristic of resource

Review

Timescale: 

time period studied

Time Scale Unspecified